REMARKS

Claims 21, 24-28 and 41-49 are pending in the application. Reconsideration and allowance of the claims is respectfully requested in view of the following remarks.

1. Claim Rejections Under 35 U.S.C. §102(b) and 103(a)

Claims 21, 24-28 and 41-48 stand rejected under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent No. 5,716,422 to Muffoletto et al. Claims 21, 28, 41, 45, and 49 are further rejected under 35 U.S.C. §103(a) as unpatentable over Muffoletto in view of U.S. Patent No. 3,907,589 to Gay et al. Muffoletto discloses an electrochemical cell having a cathode comprising a substrate and a cathode active material provided by a thermal spray deposited layer with a thickness of about 0.001 inches (25.4 microns) to about 0.4 inches (10,000 microns). Gay has been cited for its teaching with regard to nanostructured iron sulfide.

Muffoletto teaches that material suitable for thermal spray to produce the thermal spray deposited layer referred to above is selected from the group consisting of silver vanadium oxide, copper silver vanadium oxide, manganese dioxide, titanium disulfide, copper oxide, chromium oxide, copper sulfide, iron sulfide, iron disulfide, cobalt oxide, nickel oxide, carbon and fluorinated carbon and mixtures thereof. In disclosing the thermal spray of these materials Muffoletto does not teach or suggest any precautions or additional steps to protect the material being sprayed from decomposition.

Section 2121.01 of the MPEP states:

> "in determining that quantum of prior art disclosure which is necessary to declare an applicant's invention 'not novel' or 'anticipated' within section 102, the stated test is whether a reference contains an 'enabling disclosure'... ." *In re Hoeksema*, 399 F.2d 269, 158 USPQ 596 (CCPA 1968). A reference contains an "enabling disclosure" if the public was in possession of the claimed invention before the date of invention.

Applicants respectfully assert that the disclosure of Muffoletto with regard to metal sulfide, metal selenide, or metal telluride is not an enabling disclosure. As disclosed in the pending application, metal sulfides, metal selenides and metal tellurides are thermally labile and decompose at the temperature required for thermal spray. As discussed on page 9 of the pending application iron disulfide (pyrite) exemplifies this phenomenon and decomposes at 550°C, which is well below the spray temperature of thermal spray methods, which range from 3,000 to 30,000°F (1650-16,650°C) (Muffoletto: col. 2, line 66 to col. 4, line 6). As stated beginning on page 8, line 2 of the pending application, thermal spray of pyrite, if performed without any precautions against decomposition, results primarily in Fe_2O_3 and does not result in a thermal spray deposited layer of metal sulfide. Because Muffoletto does not teach or suggest that some materials maybe unstable in thermal spray condition and does not teach or suggest precautions to guard again decomposition Muffoletto is not an enabling disclosure for a thermal spray deposited layer of metal sulfides. Prior to the invention of the method described in the pending application it was not possible to produce the instantly claimed electrode.

In further support of Applicants' assertion that Muffoletto is not an enabling disclosure for a thermal spray deposited layer of metal sulfides, Applicants submit herewith a Declaration from Dr. Tongsan. D. Xiao. Dr. Xiao has attempted to thermally spray FeS_2

without employing a protective coating to form an FeS_2 coating as described by Muffoletto without success. The resulting coating was found by X-ray diffraction to be primarily Fe_2O_3 when HVOF was the thermal spray method and Fe_7S_8 when dc-arc plasma spray was the thermal spray method. In fact, Dr. Xiao explicitly states on page 3 of the Affadavit that he believes "the presence of a protective coating such as elemental sulfur is to be necessary to produce a thermally sprayed electrode comprising FeS_2 or other material that is unstable at thermal spray temperatures."

Accordingly, Applicants assert that the disclosure of Muffoletto is not enabling with regard to an electrode comprising a substrate and a layer of an active material comprising a metal sulfide, metal selenide, or metal telluride, and having a thickness in the range from about 5 to about 114 microns deposited on the substrate, wherein the active material decomposes or transforms at thermal spray temperatures to a material unsuitable for use in an electrode. Due to the fact that the disclosure of Muffoletto is not enabling, Muffoletto does not provide adequate basis for a rejection under 35 U.S.C. §102(b) or §103(a). Gay has been cited strictly for teaching nanostructured iron sulfide and does not provide adequate basis for a rejection under 35 U.S.C. §103(a) as a sole reference.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by the Applicant's Attorney.

Respectfully submitted,

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